Audience Design Effects in Interpretation

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Theoretical Background

•Audience design: speakers consciously design their speech for a specific addressee (Bell 1984; Clark & Carlson 1981)

•Oral gestures in bilingual and native signers: *Mouthing* is the voiceless visual representation of words on a signer's lips produced concurrently with manual signs. Mouthing of a spoken language during signing is the result of language contact. (Weisenberg 2003)

•Sign language interpreting: cross-linguistic strategies like mouthing, fingerspelling, and borrowing are common during interpretation (Davis 2003; Weisenberg 2003)

Procedures

•Subjects (1 male; 3 females) were tested in 4 hypothetical interpreting lectures, given in random order. The deaf audience and the lecture topic were independent variables (see Figure 1). Each time the name, age, cultural and linguistic background of the audience, setting, and topic were given on a card. Sign language interpreters regularly obtain this information when contracting for an assignment (Frishberg 1990).

•The participants were instructed to listen to a recorded excerpt of a spoken English lecture on audiocassette and interpret the source language (English) into target language (ASL) based on the information about each audience.

Testing Situations

Figure 1

Consumer	Lecture: non 0	Lecture: Tech 1
non 0	00	01
Deaf 1	10	11

•Signing was recorded digitally with a Canon Optura 200 and streamed into Macintosh iMovie.

Sample Context

Context A

Client name: Joseph Miller

Age: 18

Setting: Undergraduate Chemistry course at Columbia University. Day 10 of a fourteen-week session.

Topic: *"Neither a Borrower Nor a Lender Be": Electron Affinity*
The speaker is male, the instructor for this course. He is providing a brief overview of electron lending, borrowing, and sharing among the elements.

Background of your client: Joseph refers to himself as 'hard-of-hearing' and is considering having implant surgery. He prefers to voice for himself in class. He is the only deaf person in his family. He was mainstreamed K-12, and is now in his first year at Columbia University in New York. He hopes to work as a chemist for a pharmaceutical company.

Analysis

Each audio-taped lecture was transcribed in English. Each subject's signed output was analyzed frame by frame. Measurements taken:

- ❑ total signs realized by subjects for a baseline (Figure 2)
- ❑ total number of mouthings per subject each lecture (Figure 3).

The dependent variable was the total number of English mouthings per subject.

Results

Figure 2 *Total signs realized per subject*

Subject	Lecture: Non deaf + non technical (00)	Non deaf+ technical (01)	Deaf + non technical (10)	Deaf + technical (11)
GG	695	685	628	677
JN	593	542	620	479
CC	831	695	780	588
MP	725	666	715	595

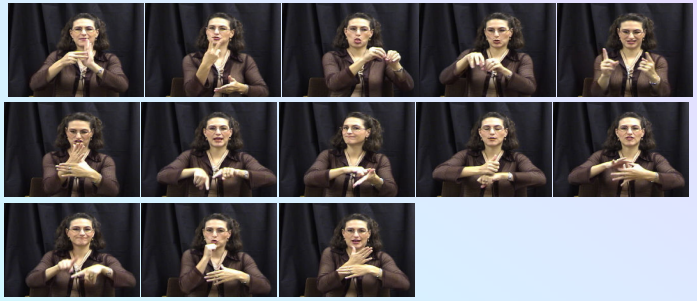
Figure 3 Total Mouthing Per Lecture

Subject	Lecture: Non deaf + non technical (00)	Non deaf+ technical (01)	Deaf + non technical (10)	Deaf + technical (11)
GG	179	388	344	225
JN	87	154	114	129
CC	76	122	478	67
MP	276	274	236	137

1. The audience makes a difference in the rate of mouthing. Sign language interpreters produce more mouthing to a non-deaf audience than to a deaf audience, based on an analysis of variance (ANOVA), F (1,3) = 11.11, p<.05. These results are congruent with other studies of audience design (Metzing & Brennan 2003; (see Galati, A. & Brennan, S. (in prep) and Özüyrek, A. (2000) for partner specific effects in non-verbal modalities).
2. On average one sign was produced in translation of every two English words heard.
3. There was a higher percent of mouthed content words than function words [1]. This result reflects findings from studies on spoken language mixing (Poplack & Meechan 1998). Nouns were mouthed more frequently than other categories across all four contexts [2].

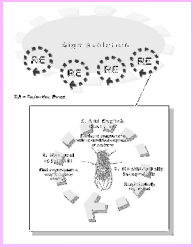
[1] For example, *determiners*: (00=0%; 01=4%; 10=3%; 11= 2%); *prepositions*: (00=15%; 01=10%; 10=6%; 11= 7%); *conjunctions:* (00=10%; 01=7%; 10=3%; 11=3 %) in comparison to *nouns:* (00=39%; 01=26%; 10=26%; 11=21%) or *adjectives:* (00=39%; 01=26%; 10=26%; 11=18%).
[2] Mouthing of *nouns*: (00=39%; 01=26%; 10=26%; 11=21%).

Sample Interpretation



"…Or they come together to share, in which case you couldn't have two loser atoms sharing, which is the case: two metals cannot form a relationship in which they share electrons, but two nonmetals can..."

Mouthing Metamorphosis



Just as the Drosophila fly is the workhorse for genetics research due to its gene mapping potential in a short life cycle, so too can a single sign-language interpreting event replicate the more lengthy process of a sign evolution in a much shorter *life cycle.* As more technical terms have been introduced to ASL, users of the language have been forced to create new signs, incorporating core-language synonyms with English initialization, English mouthing, and/or fingerspelling (Brentari & Padden 2001). Interpreters are engaging in mini-evolutions on a daily basis.

•Step 1: Search for a gestural synonym (or series of) for a term not found in ASL and *test* this choice on the audience.

•Step 2: Shorten the synonym sequence and overlap it with English equivalent mouthing.

•Step 3: Integrate the mouthing by reducing lip and overall jaw movement to match the initial sounds of the original English word. Drop English mouthing if audience indicates the concept is understood.

Discussion

Sign language interpreters design their signed outputs for a specific consumer. When engaged in translating from spoken English to American Sign Language (ASL), interpreters will shift their style primarily to accommodate their addressee. A style shift is measured by the rate of *mouthing.*

The factor conditioning the use of mouthing is the cultural identity of the audience - culturally-deaf (+deaf) or not-culturally-deaf (-deaf). This factor is more significant (ANOVA, F (1,3) = 11.11, p<.05.) than non-audience factors such as topic.

This study confirms a commonly held notion in audience design, that people are adjusting their language in reaction to people, and opens up an inquiry to the use of the interpreting context as a means of examining neologisms and language variability.

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